IN THE ABSTRACT:

The Abstract of the Disclosure has been amended as follows:

~~In a ring topology network, a number of nodes interconnect transmission links to form first and second working rings and first and second optical protection rings in a ring topology~~. Multiple working paths are established on each working [[ring]] rings and multiple protection paths are established on each of multiple protection [[ring]] rings ~~corresponding to the working paths~~. A [[first]] working path on a first working ring spans across first and second nodes for signal transmission ~~of a signal~~ in a first direction of the ring ~~topology~~, and a ~~second~~ working path [[of the]] on a second working ring spans across the first and second nodes for signal transmission ~~of a signal~~ in a second, opposite direction of the ring. ~~topology opposite to the first direction~~. A [[first]] protection path on [[the]] a first protection ring spans across the first and second nodes for ~~transmission of a~~ signal transmission in [[the]] said second direction, ~~of the ring topology,~~ and a ~~second~~ protection path ~~of the~~ on a second protection ring spans across the first and second nodes for signal transmission ~~of a signal~~ in [[the]] said first direction ~~of the ring topology~~. The first and second nodes normally use the ~~first and second~~ working paths, respectively. When one of the working paths fails, the first and second nodes use a corresponding protection path. ~~Responsive to a failure of one of the first and second working paths, the first and second nodes use a corresponding one of the first and second protection paths, instead of the failed working path~~.